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1801—1901—1928

AT Niagara Falls on June 25, 1901, J. James R. Croes, then President of the Society, presented the annual presidential address, his subject being, "A Century of Civil Engineering."

The romance of the change wrought by the civil engineer, as Mr. Croes felt it, impelled him to put his thought into dramatic form. From the vantage of 27 years later, one may smile, but a testimony is thus accorded the soundness of his concluding observation.

"But the end is not yet: there are still many problems of Nature unsolved. The experience of every day shows that there are sources of power not yet fully developed, and we cannot but say with the great poet:

" 'I doubt not through the ages one increasing purpose runs,
And the thoughts of men are widened with the process of the suns.' "

Thus in 1901 Mr. Croes spoke of the Civil Engineer:

"The most thorough exemplar of the condition of civil engineering at the beginning of the twentieth century is the modern office building in a great city. One hundred years ago, the man of enterprise who resided 50 miles from a large city and wished to consult an engineer regarding a project for a new canal, arose before daylight, struck a spark from his flint and steel, which falling on a scrap of tinder was blown by him into flame and from that a tallow dip was lighted.

"In the same primitive manner, the wood fire was kindled on the kitchen hearth and his breakfast was cooked in a pot and kettle suspended from the iron crane in the fireplace. Entering the cumbrous stage coach, hung on leather springs, which passed his door, he was driven over muddy roads, crossing the narrow streams on wooden trestle bridges and the navigable rivers on a ferry boat, the paddle wheels of which were turned by a mule on a treadmill.

"At last he was landed in the city where he walked through dirty streets paved with cobble stones until he reached his destination, a plain three-story brick building founded on sand, with a damp cellar and a cesspool in the back yard. Entering a dark hall he climbed a wooden staircase and was ushered into a neat room, rag-carpeted, warmed by a wood fire on the open hearth and lighted by a sperm oil lamp with one wick, for it was dark by this time. No wonder that before proceeding to business he was glad to take a good

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In Fiji

THOUGH doubtless few can ever avail themselves of it, a sincere and cordial invitation has been extended by our sole member resident in the Fiji Islands.

From Lautoka, Mr. Harold E. Smythe writes: "As probably the sole representative of the Society in this part of the Pacific, it is perhaps needless for me to say that at all times I shall be pleased to welcome members of the Society who by design or circumstances find themselves in Fiji."

Simultaneous Meetings

A CONDITION of suspended animation seems to be the only practicable one at this moment with respect to the San Diego meeting. The program is out, members are en route to the meeting place, and at almost the moment these words are read the meeting will be in progress. It is needless then to call attention to it and impossible to comment upon it.

Simultaneously, even taking into account the difference in longitude and "Daylight Saving", there will be a Society meeting at the diagonally opposite corner of the country. At New York, on Wednesday evening, there will be an evening meeting at which will be canvassed the ballot on the Constitutional amendment proposed with respect to the number of Honorary Members.

The subject under discussion at the New York meeting is a paper by E. W. Bush, Member, on "Letting Construction Work by Competitive Bidding". At San Diego the subjects are varied but certainly the report on the National Irrigation Policy, to be discussed on Thursday, will receive attention for it is a matter of great interest to many members.

President's Trip

IF "the better the day—the better the deed" is a true saying, the fact that President Bush and the Secretary started their visit to the Western Local Sections of the Society on a Sunday (September 9, to be specific) should augur well for the success of the trip.

The tickets of each were 69 in. in length and with the combined Pullman tickets totaled 21 ft. of scrip.

Fifteen Local Sections are included in the itinerary; at Chicago,

Milwaukee, Des Moines, the Twin Cities, Duluth, Spokane, Portland, Sacramento, San Francisco, Los Angeles, San Diego, Phœnix, Kansas City, St. Louis and Little Rock. In as many cases as practicable the Student Chapters in the vicinities will be visited.

It is unusual that a President of the Society is in a position to give the necessary time to the Society and its affairs that such visits demand. President Bush will have visited about thirty of the Local Sections during his term of office and will have met probably 4,000 or more members and have addressed another 4,000 students at the engineering colleges.

Expert Testimony

AN editorial in the New York Times of Aug. 13th, parts of which are quoted here, may interest engineers:

"Expert evidence in both civil and criminal trials", says the editorial, "has undermined faith in that form of testimony, distracted Judges and puzzled juries.

"In an endeavor to control it in future, the New Jersey Bar Association has given unanimous approval to a bill that will be introduced at the next session of the Legislature. The object is said to be 'to correct the abuses, which so frequently occur in giving expert evidence in court, where the bias and prejudice of such experts in favor of their employer are often so plainly manifested.'

"The bill drafted in New Jersey proposes that a Judge may, on motion of either party in the case or of his own volition, when it appears that expert evidence may be required, 'appoint one or more disinterested and impartial expert witnesses, not exceeding three.'

"But their qualifications must be proved, and their competence may be questioned by either side. When giving testimony objections may be raised to questions and answers as if they were adverse witnesses. The Judge shall fix their compensation and he is to determine what portion of it must be paid in civil cases by the plaintiff or the defendant.

"There is a provision, put in to guard the rights of litigants, to the effect that the action of the presiding Judge shall not 'prevent any party to any preceeding or issue from producing other expert evidence'. It would be for the jury, or for the Judge if the case were not one for a jury, to weigh the latter evidence against that of those appointed by the Court.

"Legislation of this kind would, at any rate, check an abuse that is steadily growing worse, and it would have a tendency to restrain the employment of unscrupulous experts. A feature of the bill is the requirement that 'every expert witness' shall furnish in advance of his taking the stand the conclusions he has reached upon a statement of facts submitted to him."

"Building on 57th Street"

THE Society's building on 57th Street is undergoing remodeling. It is to become one of the Schrafft restaurants.

In 1926 the property on 57th Street, which the Society owns and once occupied, was leased for a term of years to a tenant who it was understood would probably re-rent to an occupant. In the early part of this year that occupant was found and the Society entered into a supplementary agreement with the Frank G. Shattuck Company.

The property was already under a lease which was to expire on December 14th, next, but the Shattuck Company obtained possession on August 1st, and since then the Society has enjoyed the increased rent some months earlier than was to have been expected.

The Shattuck Company runs a chain of high-grade restaurants, and the "Building on 57th Street", as it is frequently called, is to have its interior re-arranged and redecorated, and to be equipped with the most modern restaurant facilities at an estimated expense of not less than $250,000.

Under the terms of the lease all costs of every kind and nature are borne by the tenant so that the rent is net to the Society.

Dunlap Family

TIME after time members have inquired regarding the family of the late John H. Dunlap, former Secretary of the Society. Because of the unusual circumstances surrounding his death, incurred in connection with his official duties as Secretary, the Society has taken an especial interest in his people. Year after year it learns interesting details showing that the children are progressing splendidly.

The latest of these reports was obtained during the past summer by an officer of the Society who stopped in Franklin, Vermont. Here the three boys are receiving excellent care from relatives of Mrs. Dunlap. The quiet atmosphere of rural life seems to agree with them so that each enjoys fine health and is making favorable progress in his school.

Of Mrs. Dunlap, who has been ill for some time, the report is not so encouraging. Her recovery, while making normal progress, has yet to permit her leaving the hospital in Waterbury, Vermont. Surely all members will join in the hopes of the family that her recovery may be rapid and complete.

Publicity for Engineers

IN the "Journal" of the Boston Society of Civil Engineers, June, 1928, appears an article by Edward Grossman under the caption "Publicity for Engineers".

Only brief extracts are possible here, but they indicate the thread of the argument as Mr. Grossman presents it:

"A good engineer, it is said, should make no noise, but let his works speak for him. This would be good advice to follow in so perfect a place as heaven but in this imperfect world every man must speak for himself."

"The man on the street knows that somewhere in town there are beings who juggle with figures and design structures. He may see one of them once in a while; he never hears them, that is certain. They say nothing, so why should he? Therefore he takes his buildings, bridges, streets, railway, water supply, and other conveniences for granted—and that is that."

"Granted that the engineer should receive publicity—this does not mean cheap talk or buncombe. Publicity does not mean vociferous self-pity. Publicity means only that the engineer obtain the same consideration in the public mind as that to which his profession and his status entitle him."

"Bankers have their financial page, physicians have their health articles . . ."

"At the present time two methods of publicity should be encouraged—the first is insistence on professional credit, and the second is newspaper publicity."

"Why should not an illustration of a building be captioned 'Blank Building. Jones & Jones, Architects; Smith and Smith, Engineers', instead of the engineers not being mentioned at all?"

"Press notices must be prepared in accordance with the usual journalistic style, with the news-interest part, not the technical-interest part, foremost. The public grasps personalities and particularities quicker than it does technicalities, and the former have more news value."

"Publicity must not contain propaganda of any sort, and must at all times be dignified and conservative in tone. Engineers are not given to exuberances and extravagances; therefore their publicity should befit them."

"Publicity, conducted in a dignified manner, will not only serve the public as an educational agency, but will tend to raise the status of the engineering profession as a whole, and will thus benefit all. The results will be worth the effort."

Tutia's Ruse

A Correspondent Suggests Another Method of Carrying Water in a Sieve

IN the April (1927) Proceedings, a story entitled "Hydraulic Hokum" refers to an incident in Roman history regarding the vestal virgin, Tutia. The explanation of the alleged miracle of carrying water in a sieve is ingenious, but I think the legend is susceptible to an interpretation that is at once simpler and more creditable to Tutia as it does not involve the aid of an accomplice, or the substitution of sieves.

It is not impossible to carry water in a sieve if certain precautions are taken. The mesh must be fine and the water must not come in contact with the wire. This condition can be met if the sieve is dipped in hot paraffine wax so that there is a thin coating over the entire sieve, without, of course, closing the holes. There are two forces involved here —gravity, which tends to draw the water through the sieve; and the surface tension of water, which tends to hold it back.

The Temple of Vesta was situated at the east end of the Forum, a distance of a little more than 700 yards from the Tiber and I see no reason to doubt that Tutia could have carried the water that distance in a sieve with the exercise of some care. When it was desired to have the water go through and quench the fire, a slight jar would be sufficient to break the surface tension and of course the water would then seep through.

Hence, it was unnecessary for Tutia to have used a false bottom or to have any accomplices, as the sieve actually used might have been handed around to the spectators and it would have appeared to them to be a perfectly normal sieve, as of course it was.

In performing this experiment, I would suggest that it is necessary to exercise care. In pouring, if water is allowed to fall with any force, it will go through. A good plan is to lay a piece of paper in the bottom of the sieve first.

If any of your readers are interested in following this subject further, I would refer them to a book entitled, "Soap Bubbles and the Forces Which Mould Them," by Prof. C. V. Boys, F.R.S., published in London in 1890 by the Society for Promoting Christian Knowledge, in which this experiment is described with many others having a bearing on the subject of the surface tension of water.—*Henry A. G. Hellyer, Member.*

Transactions Volume 92

SHORTLY, the new Volume 92 of Transactions will be issued Probably during the current month some, if not all, of these volumes will be in the mails.

Only a year ago, be it remembered, two volumes appeared instead of one. This extra volume took up the "slack", so to speak, of the papers that had accumulated, and cleared the deck for normal numbers in the few years to follow—at least so it was hoped.

But like many other well laid plans, realization may not agree with expectation. The present issue is of a single volume—that part of the plan runs true to form; but this does not mean that all the available papers have been published, as budget allowances limit the present issue to about 1,800 pages (1,860 to be exact). As a matter of fact, hardly two volumes would take care of all the material. Already an appreciable mass is available for the next volume. Any one who has noted the large amount of technical matter released by the Society in recent months would realize that nothing but a similarly increased issue of Transactions would accommodate these papers. Doubtless they will be accommodated eventually, probably by recourse to an additional volume, either next year or the one following.

As an index of engineering progress, Volume 92 ranks with the best of recent years. It will repay intensive study for any one who desires insight into the present state of the art of civil engineering. Doubtless many of these volumes will simply adorn library shelves, but the real value will be found in pithy material inside the covers. The material is there for all who will avail themselves of it. Bon Voyage, Volume 92.

October Proceedings

ALTHOUGH the October Proceedings may appear small—certainly by comparison with the ones recently issued — it lacks nothing in respect to the value of the engineering material presented. This consists of two papers and a mass of discussion.

Perhaps the papers are fewer and the discussions, more numerous than usual. If so, this is a concession to the need for printing the comments of so many members on the papers current during the past few months. More papers mean more discussion and this Proceedings gives the emphasis to the discussions—for a change.

In the first paper Samuel A. Greeley, Member, and William D. Hatfield, Associate Member, describe "The Sewage Disposal Works of Decatur, Illinois", from the combined viewpoints of Consulting Engineer and Superintendent in Charge of Operation. In condensed form, all the numerous phases of the project are presented from the preliminary work through the design, financing, and construction. The waste from a large corn starch factory made the problem unusually acute. The story of incidental difficulties met and solved serves to make the account even more worthwhile reading.

Of entirely different character are the "Water Supply Problems of a Desert Region" as recounted by William E. Rudolph, Member. In the Atacama Desert, Northern Chile, precipitation is scant to the point almost of being negligible. Added to this, evaporation, seepage, and absorption of salts further reduce the scant supply. How engineering science has aided in gathering, conserving and transporting this necessity of life is told most interestingly even to the development of hydro-electric power. To be really successful in such problems, as Mr. Rudolph well says, the engineer should be an adept even at "delving within the realms of geology and chemistry".

Then follow the numerous discussions. No attempt will be made to specify individual comments. To many members this part of Proceedings holds a unique fascination, as the fields covered are wide enough and numerous enough to provide in-

terest within every one's peculiar sphere of knowledge.

So it is with the October number. The discussions actually number 36 and the subjects treated, 16. Memoirs of deceased members are also included, 9 in all.

The Little Red Badge with a Border

IF a young man displays a small maroon Society pin encircled by a white border, greet him kindly—he belongs to a Student Chapter of the Society. A member is very likely to meet this student, for there are several hundred of him. In fact, during the past year, 1800 such student pins were purchased by members of the Student Chapters.

The staid old engineer who disdains to wear any ornament, even a Society Badge, may wonder at this exuberance of youth, but there is nothing unusual about it. The young man wears this badge first because he likes to wear it. Usually it occupies a conspicuous position in conjunction perhaps with a Fraternity pin, or an Honorary Society key.

And then you would find that he likes to be asked about it; that he is really proud of it; that to him it is the visible sign he is or intends to be really a part of the profession. Doubtless he is very proud of the profession, with all the idealism that youth yields to older and honorable men, who, to him, represent the best that the profession offers. He looks up to these men; he envies them the proud distinction of the larger blue badge; and looks forward to the day when he too will be the proud possessor of such distinction.

All these things are probably in his mind, as he gives his own emblem a prominent place in his attire. And then finally there is perhaps the thought that it will lead to recognition by an older engineer. He knows or should know that the professional man is ever sympathetic with the student. He has probably found out that the practicing engineer will talk to him as an equal; will show him his plans or his job; and discuss with him the perplexing problems, or quite possibly the happy solution finally won. The young man welcomes such opportunities, and in the back of his head he hopes that his badge will break the ice of conversation and sociability.

Let no member hesitate to recognize the little red badge. He may be sure that its wearer will welcome his advance; will give him a hearty handshake; and will appreciate the exchange of ideas or reminiscences.

A New "Bulletin"

THE Illinois Section has initiated a "Bulletin" for the purpose of keeping members of the Society resident in Chicago and vicinity informed of the Section's doings.

The first issue, dated "Chicago, September First, Nineteen Twenty-Eight", is a four-page letter-size sheet containing a reprint of the Section's Constitution; minutes of meetings; a committee report; a list of present officers and those for the thirteen years of the Section's history; notices of coming meetings; news items; and personals. Three items are quoted:

"Members are invited to have luncheon each Monday noon at the Chicago Engineers Club where an A.S.C.E. Table has been arranged for."

"We hardly know of what we are capable until the big demand is made—most people normally live below their possibilities."

—F. C. Hogarth"

"There are about 61 resident Junior Members in our Section and it is our hope that you" (each Junior) "will become more active in its affairs. . . . Please write to the Local Section Secretary and say what you have in mind that will make the Local Section more helpful to you. . . . It is our intention to appoint a Committee to represent the Juniors."

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stiff noggin of New England rum.

"Today (1901) his grandson, living at the old homestead, while comfortably eating his breakfast, which has been cooked over a gas range, reads his morning paper . . . and telegraphs to his engineer in the city that he will meet him at his office at noon. Then . . . rolling over macadamized roads to the railroad station, he boards a luxuriously appointed train, by which he is carried above all highways, through tunnels, under rivers, or across them on long-span steel bridges, and in an hour is deposited in the heart of the city, where he has his choice of proceeding to his destination through clean and asphalt-paved streets in electric surface cars at 9 miles an hour, elevated steam cars at 12 miles an hour, or through well-lighted and ventilated tunnels at 15 miles an hour.

"Reaching the spot his grandfather had visited, he finds there a huge and highly decorated building, twenty or more stories high. Founded on the primeval rock, far below the surface of the natural ground, the superjacent strata of compressible material having been penetrated by caissons of sheet metal sunk by the use of air, compressed by powerful pumps driven by steam or electricity generated at a power station half a mile or more away, and on these caissons filled with a manufactured rock such as the ordinary processes of Nature would require millions of years to produce, there is erected a cage of steel, the composition of which has been specified, and the form and mode of construction of which have been so computed that the force of the elements cannot overthrow the structure or even cause it to sway perceptibly.

"The meshes of this mighty cage are . . . all interwoven with pipes and wires. In one set of these pipes there is pure water, which has been collected from a mountain area . . . in which impounding reservoirs have been constructed by masonry dams across its valleys.

"From these reservoirs, the water, after filtering through clean sand, is conveyed 30 or 50 miles through steel or masonry conduits to covered reservoirs whence it is drawn as needed through cast-iron pipes to the building where it is to be used, and there distributed to all parts of it.

"Entering the brilliantly lighted hallway of this building, the air of which is kept in circulation by the plunging up and down of half a dozen elevators, the visitor is lifted at a speed of 500 ft. a minute, past floor after floor . . . to the headquarters of the controlling genius of the whole organism, the Civil Engineer. For he it is to whom all . . . must apply for aid and advice in the successful operation of their respective occupations. It is his . . . to direct the application of energy to the various forms of matter, original or produced, in such way as to bring about the most satisfactory results in the most speedy and economical manner.

"He has grown with the growth of the nineteenth century, and is, so far as the relations between man and matter are concerned, its most striking product."